What is claimed is:

1. A method for a system including a plurality of encoders each for receiving a first signal and encoding to generate a respective second signal for sending to a respective subscriber, the method comprising:

receiving, in each encoder, the first signal from a first source, while testing a signal path between the second source and the encoders; and

subsequently a second receiving step of receiving the first signal from a second source.

2. The method of claim 1 wherein the first source is part of a first assembly, the second source is part of a second assembly, and each encoder is part of a respective third assembly, wherein the third assemblies use a multiplexing process to share a signal path to the first assembly, and the testing operates in synchronism with the multiplexing process.

3. The method of claim 1 wherein the second source is part of an assembly, and wherein testing includes generating a signal in response to a signal received from the assembly.

4. The method of claim 1 wherein, the first source is on a first assembly, the second source is on a second assembly, and each encoder is on a respective third assembly, and the method further includes the steps, performed while each encoder is performing the first receiving step, of

sending a third signal from the second assembly;

receiving the third signal in one of the third assemblies;

generating a fourth signal in the one of the third assemblies, in response to the third

signal;

sending the fourth signal to the second assembly; and

examining the fourth signal in the second assembly.

5. The method of claim 4 wherein generating the fourth signal includes generating a

redundancy signal.

6. The method of claim 4 wherein the third signal includes a plurality of first digit

positions, and generating the fourth signal includes generating the fourth signal to include a

plurality of second of digit positions, each second digit position corresponding to a respective

first digit position.

7. A system for operating with a network, the system comprising:

a first assembly for receiving from the network to generate a first signal;

a second assembly for receiving from the network to generate the first signal;

a plurality of third assemblies;

a first signal path, the first signal path being for sending from the third assemblies to the

first assembly;

a second signal path, the second signal path being for sending from the third assemblies

to the second assembly,

wherein each third assembly includes

a multiplexor that generates a multiplexor output responsive either to the first signal from

the first assembly or the first signal from the second assembly,

an encoder that encodes the multiplexor output to generate a respective second signal for

sending to a respective subscriber,

a sender that sends on the second signal path, at a time when the multiplexor is

responsive to the first signal from the first assembly, thereby testing the second signal path.

8. The system of claim 7 further wherein the third assemblies share the first signal path

using a multiplexing process, and the sender in each third assembly includes logic to send on the

second signal path in synchronism with the multiplexing process.

9. The system of claim 7 further wherein the system generates respective fourth signals

for each third assembly, to grant the third assembly access to the first signal path at a particular

time, and the sender in each third assembly is responsive to one of the fourth signals.

10. The system of claim 7 wherein the sender in each third assembly includes a

generator that generates a third signal in response to a signal received from the second assembly,

to send the third signal on the second signal path.

11. The system of claim 7 wherein, the first source is on a first assembly, the second

source is on a second assembly, and each encoder is on a respective third assembly, and the

system further including

a generator that sends a third signal from the second assembly;

a receiver that receives the third signal in one of the third assemblies;

a generator that generates a fourth signal in the one of the third assemblies, in response to the third signal; and

a sender that sends the fourth signal to the second assembly.

12. The system of claim 11 wherein the generator that generates fourth signal includes logic that generates a redundancy signal.

13. The system of claim 11 wherein the third signal includes a plurality of first digit positions, and the fourth signal includes a plurality of second of digit positions, each second digit position corresponding to a respective first digit position.

14. The system of claim 11 wherein the first signal path includes a first plurality of parallel conductors, the second signal path includes a second plurality of parallel conductors, the system further includes

a housing supporting the first and second plurality of conductors,

and each third assembly includes

a connector for mechanically coupling to the housing, the connector having a plurality of connector conductors for sending signals between the third assembly to the first and second plurality of conductors.

15. A system comprising:

a plurality of encoders each for receiving a first signal and encoding to generate a respective second signal for sending to a respective subscriber;

means for receiving, in each encoder, the first signal from a first source, while testing a signal path between the second source and the encoders; and

means for receiving the first signal from a second source.

16. The system of claim 15 wherein the first source is part of a first assembly, the second source is part of a second assembly, and each encoder is part of a respective third assembly, wherein the third assemblies use a multiplexing process to share a signal path to the first assembly, and the testing operates in synchronism with the multiplexing process.

17. The system of claim 15 wherein the second source is part of an assembly, and wherein means for receiving while testing includes a signal generator respsonsive to a signal received from the assembly.

18. The system of claim 15 wherein, the first source is on a first assembly, the second source is on a second assembly, and each encoder is on a respective third assembly, and the system further includes

means for sending a third signal from the second assembly;

means for receiving the third signal in one of the third assemblies;

means for generating a fourth signal in the one of the third assemblies, in response to the third signal;

means for sending the fourth signal to the second assembly; and

means for examining the fourth signal in the second assembly.

19. The system of claim 18 wherein the means for generating the fourth signal includes redundancy signal generator.

20. The system of claim 18 wherein the third signal includes a plurality of first digit positions, and generating the fourth signal includes a plurality of second of digit positions, each second digit position corresponding to a respective first digit position.

21. The system of claim 18 wherein each encoder is part of a respective assembly, wherein the signal path between the second source and the encoders includes an plurality of parallel conductors, the system further includes

a housing supporting the plurality of parallel conductors,

and each assembly includes

a connector for mechanically coupling to the housing, the connector having a plurality of connector conductors for sending signals between the assembly to the plurality of parallel conductors.

22. A method comprising:

receiving from a network port to generate a first signal and a second signal;

sending the first signal to a first set of assemblies via a first signal path;

sending the second signal to a second set on assemblies via a second signal path;

sending third signals from the first set of assemblies to the network port via a third signal path; and

sending fourth signals from the second set of assemblies to the network port via the third signal path.

23. The method of claim 22 wherein the first set of assemblies share the third signal path using a priority-based multiplexing scheme.

24. A method comprising:

receiving from a network port to generate a first signal and a second signal;

sending the first signal to a first set of assemblies via a first signal path;

encoding, in one of the first set of assemblies, a portion of the first signal using a first protocol to send a first encoded signal to effect a first data rate for a first subscriber;

sending the second signal to a second set on assemblies via a second signal path; and

encoding, in one of the second set of assemblies, a portion of the second signal using a second protocol to send a second encoded signal to effect a second data rate for a second subscriber.

25. A method comprising:

28

receiving from a network port on a first assembly to generate a first signal;

sending the first signal to a set of second assemblies via a first signal path;

sending second signals from the set of second assemblies to the first assembly via a second signal path;

communicating between the first assembly and the second assemblies via third signal paths, each third signal path being electrically insulated from the other third signal paths;

subsequently, receiving from a network port on a third assembly to generate the first signal;

sending the first signal to the set of second assemblies via a fourth signal path;

sending second signals from the set of second assemblies to the third assembly via a fifth signal path;

communicating between the third assembly and the second assemblies via a sixth signal paths, each sixth signal path being electrically insulated from the other sixth signal paths.

26 A system comprising:

a housing with a plurality of signal busses;

a plurality of assemblies, each assembly including

a first connector with a plurality of conductors for sending signals between the assembly and the signal busses,

an encoder that generates subscriber signals responsive to signals on the signal busses; and

a plurality of second connectors, each located to receive subscriber signals from 2

adjacent assemblies.

27. A system comprising:

a housing with plurality of slots and a plurality of signal busses;

a plurality of first assemblies removably connected to slots in the housing;

a first second assembly, removably connected to a slot in the housing, the second assembly having circuitry for receiving signals from a network port, to send a signal on a selected one of a first plurality of signal paths, depending on an association between routing signals and first assemblies;

a first third assembly, removably connected to a slot in the housing, the third assembly having circuitry for receiving signals from a network port, to send a signal on a selected one of a second plurality of signal paths, depending on the association; and

a fourth assembly, removably connected to a slot in the housing, having a memory for storing the association.